a transforming stage that transforms a first series of N frequency domain symbols into a first burst of N time domain symbols and that transforms a second series of M frequency domain data symbols into a second burst of M time domain symbols;

a cyclic prefix appending stage that appends to a beginning of said first time domain burst a first cyclic prefix duplicating a last segment of said first time domain burst to form a first synchronization burst, and that appends to a beginning of said second time domain burst a second cyclic prefix duplicating a last segment of said second time domain burst to form a second synchronization burst, said first and second cyclic prefixes including a first portion having length ν wherein ν is greater than or equal to a duration of an impulse response of said channel; and further including a second portion after said first portion to facilitate receiver synchronization; and

wherein said first and second synchronization bursts are transmitted concatenated together.

2. The system of claim 1 wherein N equals M.

3. The system of claim 1 wherein N does not equal M.

4. The system of claim 1 wherein said first and second synchronization bursts are transmitted within the same duration that would be reserved for transmission of a single OFDM burst that does not facilitate receiver synchronization bur carries data.

5. The system of claim 1 wherein some of the N frequency domain symbols carry data.

6. The system of claim 1 wherein some of the N frequency domain symbols carry training information.

7. The system of claim 1 wherein some of the M frequency domain symbols carry data.

8. The system of claim 1 wherein some of the M frequency domain symbols carry training information.

9. The system of claim 4 wherein one or more further synchronization bursts are transmitted within said duration.

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10. A system for synchronizing to a time domain signal received via a channel, said system comprising:

a receiver system that receives one or more synchronization bursts of symbols, each of said synchronization bursts including at least two time domain synchronization sub-bursts, a first of said sub-bursts including N time domain symbols preceded by a first cyclic prefix, a second of said sub-bursts including M time domain symbols preceded by a second cyclic prefix, said first and second cyclic prefixes including a first portion having length v wherein v is greater than or equal to a duration of an impulse response of said channel; and further including a second portion after said first portion to facilitate receiver synchronization, wherein said receiver system receives further time domain bursts of symbols; and

a synchronization block that determines burst timing alignment responsive to optimization of a cost function determined responsive to said contents of said one or more synchronization bursts.

11. The system of claim 10 wherein N equals M.

12. The system of claim 10 wherein N does not equal M.

13. The system of claim 10 wherein said first and second time domain synchronization sub-bursts are received within the time period reserved for reception of a single OFDM burst that does not facilitate receiver synchronization but carries data.

14. The system of claim 10 wherein some of the N frequency domain symbols carry data.

15. The system of claim 10 wherein some of the N frequency domain symbols carry training information.

16. The system of claim 10 wherein some of the M frequency domain symbols carry data.

17. The system of claim 10 wherein some of the M frequency domain symbols carry training information.

18. The system of claim 13 wherein one or more further synchronization time domain sub-bursts are received within said time period.

19. The system of claim 10 wherein said cost function evaluates degree of match between said second portion of said first cyclic prefix and a corresponding portion of said N time domain symbols and between said second portion of said second cyclic prefix and a corresponding portion of said M time domain symbols.

20. In a digital communication system that communicates bursts of symbols via a channel, a method for synchronizing a receiver to burst timing of a transmitter comprising:

receiving one or more synchronization bursts of symbols, each said synchronization bursts including at least two time domain synchronization sub-bursts, a first of said sub-bursts including N time domain symbols preceded by a first cyclic prefix, a second of said sub-bursts including M time domain symbols preceded by a second cyclic prefix, said first and second cyclic prefixes including a first portion having length ν wherein ν is greater than or equal to a duration of an impulse response of said channel; and further including a second portion after said first portion to facilitate receiver synchronization, wherein said receiver ~~system~~ receives further time domain bursts of symbols; and

determining burst timing alignment responsive to optimization of a cost function determined responsive to said contents of said one or more synchronization bursts.